

## **A CASE STUDY OF THE LOW ENVIRONMENTAL IMPACT CRITERIA ON THE ECONOMICS OF HOUSING CONSTRUCTION**

M.J. GONZÁLEZ DÍAZ

Architect

Avda. América 29, 5º. 28002 Madrid, Spain

e-mail : mjgonzalez@arquinox.es

Prof. Dr. J. GARCÍA NAVARRO

Architect

UNIVERSIDAD POLITÉCNICA DE MADRID. Departamento de Construcción y vías rurales.

E.T.S.I. Agrónomos. Ciudad Universitaria s/n 28040 Madrid, Spain

e-mail : justo.gnavarro@upm.es

### **ABSTRACT**

The Social, human and technical actions as well as economic decision of construction will affect the environmental performance of buildings. Bioclimatic design, adequate system for the supplies of energy and water for heating and cooling, or selection of construction materials will involve a non-conventional way of construction therefore with unknown initial costs. An approach focused on the economical influence of these criteria upon the environment would enable owners and other public and private sectors to put these products into services and markets.

The paper presents a case study which includes a cost evaluation for sustainable construction criteria introduced into the projects. The case study is based on an example of a project located in the city of Valladolid, Spain. The study showed that the environmental benefits both for tenants and community for exceeded the economic values. Other important environmental benefits include better comfort and health care however, this could not be economically verified. In conclusion, promoting the collaboration between the environmental benefits and business opportunities is important in order to definitely change the myth that "green buildings" are more expensive to construct.

**Keywords :** Economic evaluation, Housing, Bioclimatic design.